

August 21st

Memory verse

Jesus saith unto him,

I am the way, the truth, and the life:

no man cometh unto the Father, but by me.

John 14:6

More about today's memory verse in the lesson for 23rd August.



Highgate Arch

Can you find the part of London called **Archway** on a map? Today's lesson explains how it got its name.

At the start of the nineteenth century, the steep road out of London through Highgate became increasingly congested. The problem was the steep gradient which caused problems for horse-drawn traffic. Cornish engineer Robert Vaizie proposed a tunnel – called an archway in those days – under Highgate Hill to ease the difficulty. You can see the Archway Company's seal on the right. I think the motto at the bottom means “We live under the earth like moles.” Look at the two wagons in the picture. What do you notice about the number of horses attached to each?



Work began but Civil Engineer John Rennie¹ soon had doubts – as did some of the men working on the tunnel.

It turned out their concerns were justified. One Monday in April 1832 the tunnel collapsed inward with a crash like thunder. No one was killed but the road had become impassable. Now what could be done?

¹ We met him in the lesson for 17th August in connection with the Bell Rock Light-house.

Within three days the decision had been made. The Highgate Archway Company would turn the road into an open cutting and a bridge would be put across it to carry Hornsey Lane which connected Highgate and Hornsey.

The bridge was the work of renowned architect John Nash (1752-1835) and it opened on **21st August** in 1813, the same year as the road. Nash's most famous building is Buckingham Palace but he also designed many of the familiar landmarks of London such as Marble Arch. As the friend of the extravagant Prince Regent (later King George IV) he was responsible for the layout of Regent's Street and Regent's Park as well as the Prince's lavish Brighton retreat, the Royal Pavilion.



Highgate Arch was designed in the style of a Roman aqueduct.² It was similar to the great viaducts that carried canals – and later railways – across rivers in other parts of the country. You can see the shape in the old photograph that heads this lesson.

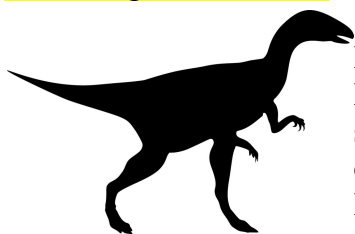
Notice also the carts in the picture making use of the new gentle slope. Can you see the figures standing on the top of the arch?

By 1897 Nash's bridge was no longer wide enough for the volume of traffic. It was replaced by a cast-iron bridge, designed by Sir Alexander Richardson Binnie (1839 – 917), the London County Council's Chief Engineer and that bridge remains to this day. From the top of it there is a very good view over London.

Something to find

Do you know where your nearest bridge is? What type of bridge is it? A river crossing? A railway bridge? A canal viaduct? A motorway flyover? Can you find out when it was built and perhaps even who built it? Does it have any information on it – an indication of clearance for vehicles passing under it, for instance?

Something to think about³



Karl Gegenbaur (1826-1903) was born on **21st August**. He was an **embryologist** and **anatomist**. He is famous for studying the small dinosaur, Compsognathus (left) and comparing it with the extinct bird, archaeopteryx (right). He came to the conclusion from this comparison that dinosaurs had evolved into birds.



Gegenbaur's idea was taken up by biologist Thomas Huxley (1825-1895) and then popularised by American **palaeontologist**, John Ostrom (1928–2005). Nowadays you will often see museum displays showing reconstructed or model dinosaurs with feathers to illustrate this idea. But is this what really happened?

First, we need to be clear about what the Bible says about where birds – and dinosaurs – come from. On day five of creation God made the flying creatures. We saw in the lesson for 10th February that this included not only what we would call various kinds of “birds” but also creatures such as bats and pterosaurs. He also made swimming creatures on that day, again not just what we would call “fish” but also creatures such as whales and plesiosaurs. Dinosaurs, however, are land animals. These were not created until the sixth day of creation. There is no room for evolution of one kind into another in the Biblical scenario.

2 Image of the Pont du Gard Aqueduct By Benh LIEU SONG (Flickr) - Pont du Gard, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=33474941>

3 <https://creation.com/archaeopteryx-unlike-archaeoraptor-is-not-a-hoax-it-is-a-true-bird-not-a-missing-link>
<https://answersingenesis.org/dinosaurs/feathers/did-dinosaurs-turn-into-birds/>

But in any case there are severe difficulties with the idea that birds could in some way evolve from dinosaurs. For instance, dinosaurs were reptiles and reptiles are **cold-blooded**. Birds, on the other hand are **warm-blooded** or endothermic creatures. In fact due to their high **metabolic rate** birds have a high body temperature. There is no evidence that dinosaurs could have been endothermic. Exactly how did cold-blooded dinosaurs become warm-blooded birds?

Then we need to consider how dinosaurs breathed and how birds breathe. Dinosaurs were reptiles and as far as we can tell from their remains they breathed in the same way as modern reptiles such as crocodiles, that is, they breathed in and out as we do and had a **diaphragm**. Birds are very different. They have a “flow through” **respiratory system** in which the air moves only in one direction not in and out. Birds do not have a diaphragm. How would it be possible for the system to gradually change from one to another?



Then there is the tremendous fuss that has been made over feathers. Unlike the respiratory system which is inside the creature and so not obvious to the observer, feathers are outside and make a huge difference to the appearance of the animal. This makes evolutionists very keen to find evidence for feathers. Internal organs such as lungs and the metabolic systems of the creatures can be glossed over but not it is not so easy when it comes to external features such as feathers. If dinosaurs evolved into birds there should be some dinosaur fossils with “nearly-

feathers” whatever that would look like – the picture above is purely imaginary – or however well they would work! You will often see reconstructions or models of dinosaurs with feathers or so-called “proto-feathers” (in reality **collagen** fibres) in museum displays but in fact there is no evidence for this. Fossilised flightless birds found at the same sites as fossils of dinosaurs, have been confused with dinosaurs and in at least one high profile case a fossil reputed to be of a feathered dinosaur was actually faked.⁴ Certain types of fossil are very valuable to collectors. A feathered dinosaur fossil would be priceless so someone thought they would put one together from other fossil pieces and make their fortune.

I have **highlighted** some of the words in the lesson above for you to look up in your dictionary or perhaps in a biology book.

Something to make

Scientists who believe in evolution have discovered ways, using pressure and heat to make fossils that “ought” to have taken millions of years to form – in just days.⁵ Of course, they don't think that the fossils they dig up from the ground could have been made quickly in that way; they still believe it must take millions of years. When God flooded the earth in the days of Noah there *was* pressure and heat as the fountains of the great deep broke open – which makes one wonder...

If you did the lesson for 24th May you might have made *your* own fossils. Today you could repeat the activity and if you have a feather you could use it to make the impression. Then you will have your own fossil feather – although it will definitely not be a dinosaur feather! If you set up your own museum in connection with the lesson last month about Sir Ashton Lever's museum,⁶ a fossil feather would be a good addition to your display.

4 So-called *Archaeoraptor liaoningensis*.

5 <https://www.atlasobscura.com/articles/how-to-make-a-fossil>

6 See the lesson fro 12th July.